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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER	
SMITH, SHEILA B	

ART UNIT	PAPER NUMBER
2681	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/660,668	HOTTINEN ET AL.	
	Examiner	Art Unit	
	Sheila B. Smith	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara et al. (U.S. Patent Number 5,809,019) in view of Tanishima et al. (U.S. Patent Number 6,175,747).

Regarding claims 1,23,25-28,43,44 Ichihara et al. discloses transmission diversity system, Ichihara et al. Further discloses a method for implementing transmission antenna diversity in a mobile communications system, which includes at least two receiving units (16,19) and at least one transmitting unit (11,12) as exhibited in figure 1, wherein there are at least two transmission antenna routes (13,14) as exhibited in figure 1, in which mobile communications system the receiving unit (16,19) and the transmitting unit (11,12) are in data transmission connection with one another over a radio path, in which method broadcast is transmitted through each transmission antenna route (13,14) of the transmitting unit (11,12), user data is transmitted through the transmission antenna route (13,14) connected for use from the transmitting unit (11,12), in the method in the transmitting unit (11,12) data is produced in the broadcast signal of each transmission antenna route which individualizes the transmission antenna route (151,153) (which reads on column 1 lines 39-58), an identification is made in the receiving unit based on the data included in the broadcast signal to find out from which transmission antenna route each broadcast signal was transmitted, based on the received antenna route choice message, the

transmission antenna route is connected individually to each receiving unit (which reads on column 5 lines 14-34). However Ichihara et al. fail to specifically disclose the optimum transmission antenna route is chosen with the aid of broadcast signals in the receiving unit, the chosen transmission antenna route is made known to the transmitting unit.

In the same field of endeavor, Tanishima et al. further discloses base transceiver station and subscriber unit in wireless local loop system using personal handy-phone system and method for operating same. In addition Tanishima et al. discloses the optimum transmission antenna route is chosen with the aid of broadcast signals in the receiving unit, the chosen transmission antenna route is made known to the transmitting unit as exhibited in figure 1 and disclosed in column 8 lines 54-65.

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to modify Ichihara et al. by specifically providing for the transmission antenna route is chosen with the aid of broadcast signals in the receiving unit, the chosen transmission antenna route is made known to the transmitting unit as taught by Tanishima et al. for the purpose of having a good reception sensitivity is always selected.

Regarding claim 2, additionally, Ichihara et al. discloses identify the transmission antenna route, an individual emission of the connected transmission antenna route is added to the user data signal to be transmitted (which reads on column 2 lines 1-5).

Regarding claim 3, additionally, Ichihara et al. discloses connection of the transmission antenna route is checked in the receiving unit (MS, 701) based on the individual emission added to the user data signal (which reads on column 2 lines 1-5).

Regarding claim 4, Ichihara et al. discloses the connection of the transmission antenna route the individual emission of the transmission antenna route connected for transmission is compared with the signal shaping method of the chosen optimum transmission antenna route (which reads on column 2 lines 1-10).

Regarding claim 5, Ichihara et al. discloses statistics are made on how the connection of the transmission antenna route matches the chosen optimum transmission antenna route, and the transmitting unit is notified, when matching in terms of quantity falls short of a pre-established threshold value (which reads on column 1 lines 24-31).

Regarding claim 6, Ichihara et al. discloses the message to the transmitting unit the transmitting unit is controlled to choose a pre-established transmission antenna route (which reads on column 2 lines 1-10).

Regarding claim 7, Ichihara et al. discloses the transmission settings of the signal are changed in the transmission of the next antenna route choice message, if the connection of the transmission antenna diversity differs from the chosen optimum transmission antenna route (which reads on column 2 lines 1-10).

Regarding claim 8, Ichihara et al. discloses next signal including an antenna route choice message is transmitted with a higher transmission power (which reads on column 1 lines 24-31).

Regarding claim 9, Ichihara et al. discloses the next antenna route choice message is coded with better channel coding (which reads on column 2 lines 1-10).

Regarding claim 10, Ichihara et al. discloses the channel estimate of the chosen optimum transmission antenna route is used for breaking up the received user data, and the connected

transmission antenna route is established as the chosen optimum transmission antenna route, when these routes are different from each other (which reads on column 2 lines 1-10).

Regarding claim 11, Ichihara et al. discloses the transmission of each transmission antenna route is shaped by an individual signal shaping method, which is an individual frequency offset (which reads on column 1 lines 39-58).

Regarding claim 12, Ichihara et al. discloses the transmission to each transmission antenna route is shaped by an individual signal shaping method, which is an individual hash code symbol pattern (which reads on column 5 lines 1-10).

Regarding claim 13, Ichihara et al. discloses the transmission of each transmission antenna route is shaped by an individual signal shaping method, which is an individual hash code (which reads on column 5 lines 1-15).

Regarding claim 14, Ichihara et al. discloses the transmission of each transmission antenna route is shaped by an individual signal shaping method, wherein on different antenna routes the signal is modulated by a different number of hash codes in parallel (which reads on column 5 lines 1-10).

Regarding claim 15, Ichihara et al. discloses the transmission of each transmission antenna route is shaped by an individual signal shaping method, which is an individual channel coding (which reads on column 5 lines 1-20).

Regarding claim 16, Ichihara et al. discloses transmission antenna route an individual signal shaping method is established, which is orthogonal in relation to the signal shaping method of the other transmission antenna routes (which reads on column 2 lines 1-20).

Regarding claim 17, Ichihara et al. discloses that broadcast is transmitted through each transmission antenna route of the transmitting unit, so that the broadcast signals of the different transmission antenna routes include at least one information part, which is the same (which reads on column 2 lines 20-45).

Regarding claim 18, Ichihara et al. discloses that broadcast is transmitted through each transmission antenna route of the transmitting unit, so that the information part is the same in the broadcast signal of the different transmission antenna routes (which reads on column 5 lines 1-10).

Regarding claim 19, Ichihara et al. discloses that broadcast is transmitted through each transmission antenna route of the transmitting unit, so that the broadcast signal is divided between the different transmission antenna routes (which reads on column 2 lines 1-10).

Regarding claim 20, Ichihara et al. discloses at least two receiving: units and at least two transmitting units simultaneously in data transmission connection with each other over a radio path, based on the broadcast signals of the transmitting units a choice is made in unit of the optimum transmission antenna route combination, which includes one transmission antenna route of each transmitting unit (which reads on column 2 lines 1-10).

Regarding claim 21, Ichihara et al. discloses a mobile communications system, wherein there are at Least two receiving units and at Least two transmitting units at based on the broadcast signals of the transmitting units a choice is made in unit of the optimum transmission antenna route (which reads on column 2 lines 20-40).

Regarding claim 22, Ichihara et al. discloses an antenna route choice message is coded for transmission to the transmitting unit (which reads on column 2 lines 1-10).

Regarding claim 24, Ichihara et al. discloses that the chosen transmission antenna branch is identified with the aid of the signal shaping method which is individual for the transmission antenna branch, for identification of the transmission antenna branch, an emission individual for the transmission antenna branch connected for transmission is added to the user data signal to be transmitted, and based on this emission, the connection of the transmission antenna branch is checked in the receiving unit (which reads on column 2 lines 1-10).

Regarding claim 29, Ichihara et al. discloses the transmission antenna route, an identifier identifying the transmission antenna route connected for transmission is transmitted among the user data (which reads on column 5 lines 7-17).

Regarding claim 30, Ichihara et al. discloses in that in the receiving unit (MS) the connection of the transmission antenna route is checked based on the identifier to be transmitted among the user data (which reads on column 5 lines 7-10).

Regarding claim 31-41, Ichihara et al. discloses in that in order to check the connection of the transmission antenna route the identifier of the transmission antenna route connected for transmission is compared with the identifier of the chosen optimum transmission antenna route (which reads on column 5 lines 7-10).

Regarding claim 42-52, Ichihara et al. discloses a mobile communications system having at Least two receiving units and at least two transmitting t h at based on the broadcast units, signals of the transmitting units a choice of the optimum transmission antenna route is made in the unit (which reads on column 2 lines 1-10).

Regarding claim 53,54, Ichihara et al. discloses that on the connection specific channel an individual identifier is transmitted which identifies the transmission antenna route (which reads on column 2 lines 1-10).

Regarding claims 55,59,60, Ichihara et al. discloses arrangement for implementing transmission antenna diversity in a mobile communications system, which includes at least two receiving units (216) and at least one transmitting unit (207), wherein there are at least two transmission antenna routes (209,218), in which mobile communications system 'the receiving unit (216) and the transmitting unit (207) are in a data transmission connection with each other over a radio path, that the arrangement includes in the transmitting unit (207): broadcasting means (207) for transmitting a broadcast signal through each transmission antenna route, so that information individual the transmission antenna route is produced in the signals to be transmitted switching means (208,217) for connecting the individual transmission antenna route to the transmission of user data, and in the receiving unit (216). However Ichihara et al. fail to specifically disclose choosing means for choosing an optimum transmission antenna route based on the received broadcast signals and for notifying the transmitting unit of the choice.

In the same field of endeavor, Tanishima et al. further discloses base transceiver station and subscriber unit in wireless local loop system using personal handy-phone system and method for operating same. In addition Tanishima et al. discloses the choosing means for choosing an optimum transmission antenna route based on the received broadcast signals and for notifying the transmitting unit of the choice as exhibited in figure 1 and disclosed in column 8 lines 54-65.

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to modify Ichihara et al. by specifically providing for choosing means for choosing an optimum transmission antenna route based on the received broadcast signals and for notifying the transmitting unit of the choice as taught by Tanishima et al. for the purpose of having a good reception sensitivity is always selected.

Regarding claim 56-59, Ichihara et al. discloses that it also includes in the transmitting unit (BS, 700): communication means (53) for shaping the user data to be transmitted in such a way that it identifies the connected transmission antenna route (which reads on column 5 lines 1-10).

Regarding claim 61-65, Ichihara et al. discloses that it also includes in the transmitting unit (700):communication means (53) for shaping the user data to be transmitted in such a way that it will identify the connected transmission antenna route (which reads on column 2 lines 17-28).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheila B. Smith whose telephone number is (703)305-0104. The examiner can normally be reached on Monday-Thursday 6:00 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Smith S. Sm
September 2, 2004

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600